

REMARKS**Claim Disposition**

Claims 1 – 20 are pending in the application. Claims 1 – 20 have been rejected.

Claim Rejections – 35 U.S.C. § 102(e)

Claims 1 - 20 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Hoshi et al (U.S. Published Patent Application No. US 2001.0004720 A1), referred to herein as Hoshi '720. The Examiner states in the Office Action that:

"As per claims 1, 15, 16, 17, 18, 19, and 20, Hoshi et al. disclose receiving a plurality of signals indicative of the rear steering angle in paragraph 20; checking at least one of said plurality of signals to determine if it falls within a valid range in paragraph 20; correlating at least a first signal of the plurality of signals with at least a second signal of said plurality of signals to determine if either said first signal or said second signal is invalid in paragraph 20; and signaling a rejection of any of said plurality of signals is found to be invalid in paragraph 20."

"As per claim 2, Hoshi et al. disclose comparing said first signal with an expected value at about an inflection point of said second signal in paragraph 51 and figure 6."

"As per claim 3, Hoshi et al. disclose adding a second rear-wheel angle offset corresponding to said second signal in response to said comparing in paragraph 10."

"As per claim 4, Hoshi et al. disclose subtracting a center value from said signal and multiplying a result of said subtracting by a scale factor in paragraph 13."

"As per claim 5, Hoshi et al. disclose computing said expected value with a reference to a look-up table on paragraph 56."

"As per claims 6 and 11, Hoshi et al. disclose computing said expected value by evaluating a continuous function in Figure 6A. The expected values are found from previous signals that are stored."

"As per claim 7, Hoshi et al. disclose calculating a steering angle corresponding to one of said first signal and second signal so as to create a calculated angle in paragraph 52; and computing an expected value of the other of said first signal and said second signal in accordance with said calculated angle in paragraph 52."

"As per claim 8, Hoshi et al. disclose comparing said expected value of said other of said first signal and said second signal in paragraph 52."

"As per claim 9, Hoshi et al. disclose determining tha(n) any of said

plurality of signals is invalid if said expected value and said actual value are not substantially equivalent in paragraph 52."

"As per claim 10, Hoshi et al. disclose wherein at least one of said calculating and said computing further comprises using a look-up table in paragraph 56."

"As per claims 12 and 13, Hoshi et al. disclose said plurality of signals comprises a plurality of signal components of a single carrier signal in paragraph 10; providing a single sensor having two signal outputs in paragraph 10."

"As per claim 14, Hoshi et al. disclose comparing at least one of said plurality of signals with an upper limit and a lower limit in paragraph 56."

Furthermore, the Examiner in response to the arguments provided in the October 09, 2003 response to the first Office Action states:

"Applicant's arguments filed 10-9-03 have been fully considered but they are not persuasive. The first argument dealing with claim 1 is not convincing because Hoshi et al. discloses not providing the new first and second signals to the controller when they are not proper. This is indicating signal rejection. The second argument with respect to claim 2 is not convincing because the claims recites the limitations "at about" an inflection point. The examiner interprets the range shown in figure 6 to be "at about" the inflection point. The third argument deals with calculating a steering angle corresponding to one of the first signal and the second signal and then calculating the expected value with the other of the first and second value. If the reference is interpreted so that the first signal in the claim is either the first or second signal in the reference and the second signal in the claim is the third signal in the reference then the reference reads on the invention. The fourth argument deals with a "single carrier signal", this is interpreted by the examiner to mean that the two signals are at the same frequency. In the reference in paragraph 10, it is disclosed that the first and second signal have the same amplitude and period and are out of phase by ¼ wavelength."

Applicants respectfully contend that the explanation in the Office Action significantly mischaracterizes the teachings of Hoshi '720. To anticipate a claim under 35 U.S.C. §102, a single source must contain all of the elements of the claim. Lewmar Marine Inc. v. Bariant, Inc., 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. Titanium Metals Corp. v. Baymet, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

With regard to Claims 1 and 15 - 20, Applicants respectfully contend that Hoshi '720 does not teach or disclose each element of the invention "arranged as in the claim". Specifically, Hoshi '720 does not teach or disclose, "signaling a rejection if any of said plurality of signals found to be invalid." To support the rejection of this element, the explanation in the Office Action relies on paragraph 20 of Hoshi '720. However, at paragraph 20 there is no disclosure with respect to signaling the rejection. There is only a summary of how the controlling section acts upon the determinations made therein. Furthermore, the Examiner states: "Hoshi et al. discloses not providing the new first and second signals to the controller when they are not proper. This is indicating signal rejection." Applicants respectfully contend, that the Examiner has mischaracterized the cited reference and the claimed invention. Determination of whether a signal is valid and "not providing the ... signals to the controller" is not equivalent to "signaling a rejection." In Hoshi et al. all that is done is a determination is made as to passing the latest data along to the controlling section, in the claimed invention, an indication of a status of the data is specifically claimed. No such specific information transfer is taught by Hoshi et al. There is no teaching to even suggest that the controlling section is aware as to whether it is getting the older data because of a rejection, or newer data. Hoshi merely discloses passing the new data along if it is deemed valid. Therefore, because Hoshi '720 does not disclose or teach an element of the invention it cannot anticipate the Applicants' claims. Thus, Claims 1 and 15 -- 20 are allowable, the rejections are improper, and they should be withdrawn.

In view of the above discussion, Claims 2 – 14 depend from Claim 1, whether directly or indirectly, and include all of the corresponding limitations thereof. Claims 1 and 15 -- 20 are not taught by Hoshi '720, therefore, Claims 2 – 14 cannot be taught by Hoshi '720 either. Thus, Claims 2 – 14 are allowable, the rejections are improper and they should be withdrawn.

With regard to Claim 2, Applicants respectfully contend that Hoshi '720 does not teach or disclose each element of the invention "arranged as in the claim". Specifically, Hoshi '720 does not teach or disclose, "comparing said first signal with an expected value at about an inflection point of said second signal." To support the rejection of this element, the explanation in the Office Action relies on paragraph 51 and Figure 6 of Hoshi '720. However, at paragraph 51 there is no disclosure with respect to an inflection point of the signals. In fact, paragraphs 51 – 55 and Figure 6 specifically teach that the measurements are not made "at or about an inflection point". For example, Figure 6 specifically depicts that the comparison of the signals discussed therein is made at the particular voltages of 3.0 and 4.0

volts. Moreover, these voltages points rely on the linearity of the signals not an inflection point of the signals.

Furthermore, the Examiner in response to previous arguments suggests: "The examiner interprets the range shown in figure 6 to be "at about" the inflection point." Applicants respectfully suggest that this interpretation is in contravention to the plain meaning of the claim wording. The point of inflection is known in the art to be at the point where the second derivative changes sign. More particularly, in this instance, at the points where the slope of the second signal changes sign. This is clearly taught in the specification and figures. On the contrary, Hoshi teaches measurements nowhere near the points where its first and second detection signals change sign. In fact, Hoshi teaches quite the opposite. To expand the disclosure of Hoshi et al. as including the points of inflection of the signals disclosed therein mischaracterizes the teachings therein.

Finally, Applicants respectfully point out that, utilizing the interpretation provided by the Examiner, Hoshi et al. does not teach or disclose the claimed invention as "arranged in the claim." In particular, the Examiner's attention is directed to note that in the claim, the first signal compared with an expected value at a particular point (e.g., the inflection point) of the second signal. It is evident that only the second signal includes an inflection point. Employing the Examiner's interpretation: "if the reference is interpreted so that the first signal in the claim is either the first or second signal in the reference and the second signal in the claim is the third signal in the reference then the reference reads on the invention," then it becomes evident that the Examiner is suggesting that it is the first signal that includes an inflection point not the second as claimed. In addition, the Examiner's attention is directed to note that, Hoshi et al. compares the first and second detection signals and then compares the third to the first and second. However, employing the Examiner's interpretation this would mean that the claimed invention compares the second signal with inflection points to the first signal and not "comparing said first signal with an expected value at about an inflection point of said second signal" as claimed. Therefore, because Hoshi '720 does not disclose or teach an element of the invention it cannot anticipate the Applicants' claims. Thus, Claim 2 is allowable, the rejections are improper, and they should be withdrawn.

In view of the above discussion, Claims 3 – 6 depend from Claim 2, whether directly or indirectly, and include all of the corresponding limitations thereof. Claim 2 is not taught by Hoshi '720, therefore, Claims 3 – 6 cannot be taught by Hoshi '720 either. Thus, Claims 3 – 6 are allowable, the rejections are improper and they should be withdrawn.

With regard to Claim 3, Applicants respectfully contend that Hoshi '720 does not teach or disclose each element of the invention "arranged as in the claim". Specifically, Hoshi '720 does not teach or disclose, "adding a second rear-wheel angle offset corresponding to said inflection point to a signal corresponding to said second signal in response to said comparing." To support the rejection of this element, the explanation in the Office Action relies on paragraph 10 of Hoshi '720. However, at paragraph 10 there is no disclosure with respect to adding an offset corresponding to the inflection point. In fact, paragraph 01 merely discloses that the characteristics of the three detection signals. Therefore, because Hoshi '720 does not disclose or teach an element of the invention it cannot anticipate the Applicants' claims. Thus, Claim 3 is allowable, the rejections are improper, and they should be withdrawn.

With regard to Claim 4, Applicants respectfully contend that Hoshi '720 does not teach or disclose each element of the invention "arranged as in the claim". Specifically, Hoshi '720 does not teach or disclose, "subtracting a center value from said second signal; and multiplying a result of said subtracting by a scale factor." To support the rejection of this element, the explanation in the Office Action relies on paragraph 13 of Hoshi '720. However, at paragraph 13 there is no disclosure with respect to subtracting a center value from said second signal and multiplying a result of said subtracting by a scale factor. In fact, paragraph 13 merely discloses partitioning the range of steering that corresponds to the wavelength of the first and second detection signals. There is no disclosure with respect to subtracting a center value or multiplying by a scale factor. Therefore, because Hoshi '720 does not disclose or teach an element of the invention it cannot anticipate the Applicants' claims. Thus, Claim 3 is allowable, the rejections are improper, and they should be withdrawn.

With regard to Claim 7, Applicants respectfully contend that Hoshi '720 does not teach or disclose each element of the invention "arranged as in the claim". Specifically, Hoshi '720 does not teach or disclose, "calculating a steering angle corresponding to one of said first signal and said second signal so as to create a calculated angle." To support the rejection of this element, the explanation in the Office Action relies on paragraph 52 of Hoshi '720. However, at paragraph 52 there is no disclosure with respect to calculating a steering angle corresponding to one of said first signal and said second signal. In fact, paragraph 52 merely discloses that the angle identified as A "represents the angle of rotation of the steering

wheel representing one determination timing point when determining the amplitudes of the ... signals a and b". Moreover, Hoshi '720 does not teach or disclose, "computing an expected value of the other of said first signal and said second signal in accordance with said calculated angle." Hoshi '720 does not teach or disclose anything with respect to using one signal to make one determination e.g., calculated angle" and using the other signal for another, e.g., "expected value". In fact, paragraph 55 specifically teaches how the signals are utilized for the comparison in Hoshi '720.

Finally, as mentioned above, employing the Examiner's suggested interpretation to applicants claims would result in an mischaracterization of the claims. Specifically, the Examiner states: "if the reference is interpreted so that the first signal in the claim is either the first or second signal in the reference and the second signal in the claim is the third signal in the reference then the reference reads on the invention." Applying the Examiner's suggested interpretation to the claim elements results in using one of the first or second detection signals as the claimed "first signal" and the third detection signal as the claimed "second signal." Furthermore, applied to the language of the claim, it would suggest that forming the calculated steering angle from the AC first and second detection signals of Hoshi et al. and then computing an expected value of the third detection signal of Hoshi et al. in accordance with said calculated angle. However, this interpretation is in contravention of the teachings of Hoshi et al., wherein it is disclosed that the third detection signal is compared to both the first detection signal and the second detection signal. (See para 22 and 64 -- 66), and the comparison is of the first two detection signals (a), (b), with the third (c) to see if they (a, b, emphasis added) fall within their proper ranges. Therefore, because Hoshi '720 does not disclose or teach an element of the invention it cannot anticipate the Applicants' claims. Thus, Claim 7 is allowable, the rejections are improper, and they should be withdrawn.

In view of the above discussion, Claims 8 – 11 depend from Claim 7, whether directly or indirectly, and include all of the corresponding limitations thereof. Claim 7 is not taught by Hoshi '720, therefore, Claims 8 – 11 cannot be taught by Hoshi '720 either. Thus, Claims 8 – 11 are allowable, the rejections are improper and they should be withdrawn.

The arguments presented herein are made for the purposes of better defining the invention, rather than to overcome the rejections for patentability. The claims were not amended to overcome the prior art and therefore, no presumption should attach that either the claims have been narrowed over those earlier presented, or that subject matter or equivalents thereof to which the Applicants are entitled has been surrendered. Allowance of the claims is

respectfully requested in view of the amendments and following remarks. Moreover, no amendments as presented alter the scope of the claimed invention and therefore cannot necessitate a new grounds rejection. It is believed that the foregoing remarks are fully responsive to the Office Action and that the claims herein should be allowable to the Applicants. Accordingly, reconsideration and withdrawal of the rejections are requested.

In the event the Examiner has any queries regarding the instantly submitted response, the undersigned respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention.

If there are additional charges with respect to this matter or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully Submitted,

CANTOR COLBURN LLP

By Troy J. LaMontagne

Troy J. LaMontagne
Registration No. 47,239
55 Griffin Road South
Bloomfield, CT 06002
Telephone: (860) 286-2929
Facsimile: (860) 286-0115

Date: February 10, 2004